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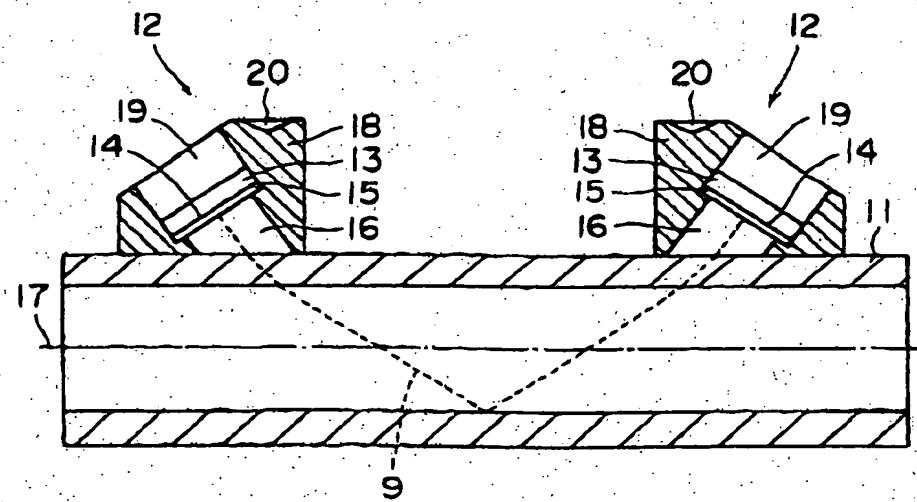
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(54) Clamp-on ultrasonic flowmeter

(57) A clamp-on ultrasonic flowmeter has a pair of ultrasonic transmitting-receiving devices which are placed on a pipe in which a liquid flows. Each device is composed of a composite of a ultrasonic transducer and a ultrasonic propagating element which propagates ultrasonic wave transmitted by the transducer predominantly in the direction perpendicular to a plane of the transducer (which is arranged at an acute angle from the center line of the pipe), and a ultrasonic propagating

layer placed between the ultrasonic propagating element and the pipe. The ultrasonic propagating layer has a viscosity of 0.5×10^{-3} to 3×10 Pa·sec at 25°C and a rate of sonic propagation in terms of V_1 at 25°C satisfying the condition of $0.5 < V_1/V_2 < 1.7$ in which V_2 represents a rate of sonic propagation of material of the pipe at 25°C . Otherwise, the ultrasonic propagating layer has a rate of penetration of needle in the range of 10 to 300 at 25°C and a rate of sonic propagation satisfying the same condition.

FIG. 1



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